

Application No. 10/630,047

Applicant: JACOBS, Eugene A.

Art Unit: 3749

Examiner: Jiping Lu

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REMARKS

Applicant acknowledges and appreciates the Examiner's finding of allowable subject matter in Claim 4. Applicant has amended the title of the invention to disclose the heat absorbing feature. Applicant has amended Claims 1-4 in order to incorporate the amended title of the within invention. Also, Applicant has amended Claim 1 to include preamble language relating to the function of cooling the area near the cooking equipment. Applicant has cancelled Claim 5. Reconsideration and allowance of Claims 1-4 is respectfully requested.

The Examiner objected to the disclosure and specifically objected to the use of the term "means" in the abstract. Applicant has amended the abstract to replace the term "means" with acceptable terminology, in accordance with the Examiner's requirement.

The Examiner rejected Claims 1-2, citing Jacobs (U.S. Pat. 3,980,072) in view of Lesage (U.S. 6,334,411), et al. The Examiner lists the limitations which Jacobs has in common with the Applicant's invention; however, the "tank and rigid water container", in Jacobs, are the building water heater, and the rigid water container, in Applicant's invention, is a container separate from the water heater, which communicates with the building water heater as set forth in the ninth phrase of Claim 1. In addition, the "circulator 41", of Jacobs is labeled as such but the piping arrangement as depicted in Figure 3, of Jacobs, will allow a flow in only one direction. The direction of flow must be from the water supply at 31 through the panels and on to the circulator 41, as indicated by the direction arrows, in the drawing figure (Fig. 3). From the circulator 41, the flow joins another pipe from the water supply, from reference 45 and enters the building water

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heater. Jacobs does not provide for circulation of water from the water heater, or tank, to the panels in a fluid circuit.

The Examiner noted that the Jacobs apparatus and the Applicant's invention were arranged in the same manner; however, the Applicant's invention does provide for circulation of the fluid through a fluid circuit as stated in the eighth phrase of Claim 1. Applicant's invention includes a second outlet, (ninth phrase of Claim 1), from a water container which is separate from the building water heater, so that a different and improved arrangement is possible. Applicant's invention is configured to circulate water from the container, through the conduits and back to the inlet of the container (eighth phrase of Claim 1). The fluid is urged, by a pump, through the circuit and may circulate independently from the flow or absence of flow from the water supply. It may be appreciated that the use of the Applicant's invention to circulate water through the radiator assembly, during a period when cooking equipment is in use, will warm the water in the container without the use of additional energy. When hot water is drawn, from the water heater, the water heater will be refilled from the container of Applicant's invention. The water, drawn from the container, to the water heater, will be pre-heated to some degree, even when the cooking equipment has been shut down for some time. The novel fluid circuit of Applicant's invention, which circulates water through the radiator and container, when the cooking equipment is shut down, is an added safety feature since radiant and conductive heat may build up when the exhaust hood is shut down at the same time the cooking equipment is shut down. Such heat buildup has been known to cause serious fires after hours in the exhaust system where residual grease can be

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ignited at the temperatures accompanying some heat buildups. The arrangement presented in Jacobs has no capacity to store warmed water, other than the volume of water contained within the panels. Once the water within the panels is warmed, the system, of Jacobs depends on the opening of a hot water tap to draw water from the water heater and consequently draw more water into the panels. The patent to Jacobs has no fluid circuit to circulate water independent of the draw from the water supply to the water heater.

The Examiner cites Lesage for teaching the concept of using a pump for circulating water through the fluid circuit. Lesage discloses the use of a circulating pump to circulate water in a heat exchanger which operates to transfer heat from a liquid supply to another liquid supply. Lesage does not suggest or imply the use of a fluid circuit or circulating pump to absorb radiant heat from ambient air and transfer heat to a liquid. Lesage does not teach or suggest the use of any technique to absorb heat from ambient air to cause cooling.

The Examiner rejected Claims 1-3 citing Jacobs in view of West (U.S. Pat. 6,612,267). The Examiner draws the same comparison between the limitations of Jacobs and the limitations of Claim 1. Claim 1 includes limitations defining a fluid circuit flowing independently of the water flow from the pressurized water supply. The patent to Jacobs discloses a system where the flow through the panels is governed by the draw on the water heater (see col. 1, lns. 18-22). The Applicant's invention may be used to pre-heat the water in the container. The pre-heated water is delivered to the water heater when water is drawn from the water heater. In the system of Jacobs, only the water in the panels is heated during a period when no water is drawn from the water

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heater. Pressure relief valves are employed to dump overheated water (col. 3, lns. 22,23). At a time when the panels, of the apparatus of Jacobs, are cool, the system delivers cold water to the water heater. The improvement of Applicant's invention provides for a more efficient system through the use of the novel arrangement of conduits to provide a fluid circuit independently operable, from the draw on the water supply (see Claim 1, 8th and 10th phrases).

The patent to West discloses the use of a pump in a heat exchanger. In a manner similar to Lesage, West discloses the use of warmed water in a conduit of the heat exchanger to warm water in a separate conduit within the heat exchanger. A pump is used to circulate the water but the circuit does not operate to absorb heat from ambient air and to cool the ambient air, as set forth in the first phrase of Claim 1.

The Examiner rejected Claims 1-2 and 5 citing Jacobs in view of Hughes. The Applicant relies on the remarks stated above to counter the Examiner's comparison between the disclosure of Jacobs and the Applicant's claims. The patent to Hughes discloses a rooftop water heater having a circulation pump which draws water from a water heater tank and redeposits the water to evenly distribute the hotter water within the tank (col. 6, ln. 35). The circulation pump also replaces the hot water in the building's water pipes. The pump is used to redistribute water within the tank. The Applicant claims the use of a pump to draw water from a container, circulate water to a radiator assembly, where the water is warmed and circulate the water back to the container, (10th phrase, 8th phrase of Claim 1). The system of Hughes would tend to cool the water in the piping before returning it to the water heater; thereby causing the water heater to

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require more energy to maintain a preset temperature. The Applicant's invention makes use of the circulating pump to warm the water in a container, for delivery to a water heater; thereby reducing the energy requirement of the water heater.

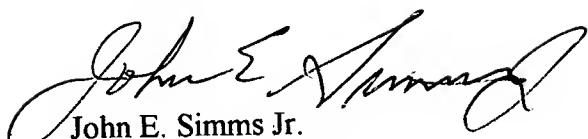
The Applicant has cancelled Claim 5. Claims 2-4 depend from Claim 1 and include additional limitations. Applicant maintains that Claim 1 is allowable; therefore, dependent Claims 2-4 are in allowable form as well.

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In view of the foregoing Amendment and Remarks, it is believed that the application is now in condition for allowance and a notice to that effect is respectfully requested.

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